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ABSTRACT

The development and interrelationship of various measures of independence in children ages 3-12 are examined. Subjects were scored on measures of locus of control and achievement motivation and were rated by teachers on independence and achievement. Subjects were also scored on reliance on adult evaluation and self-evaluation. The results showed that each of these measures follows a different developmental pattern and is related differently to each other, depending on ages, thus suggesting qualitative differences in independence at different age levels. (Author/BJG)

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Development of Independence: Locus of Control, Achievement Motivation and Self vs. Adult Evaluation[1]

by

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Development of Independence:

Locus of Control, Achievement Motivation and

Self vs. Adult Evaluation

Audio-Visual Aids - 4 2" x 2" slides

Area - Developmental Psychology or Child Development

Brief abstract.

This research examined the development and interrelationship of various measures of independence in children ages three through twelve. Ss were score on measures of locus of control and achievement motivation and were rated by teachers on independence and achievement. Ss were also scored on reliance on adult evaluation and self-evaluation. The results showed that each of these measures follows a different developmental pattern and is related differently to each other, depending on ages, thus suggesting qualitative differences in independence at different age levels.

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Development of Independence: Locus of Control, Achievement Motivation and Self vs. Adult Evaluation

INTRODUCTION

Research on independence in children has suffered from a lack of consistent measures. Locus of control, achievement motivation, teacher ratings of independence and self-evaluation have all been suggested as indices of independence. (Rosen and D'Andrade, 1959;[9] Crandall, Dewey, Katkovsky and Preston, 1964;[4] Baumrind, 1971;[1] and Katz, 1967[8] have used some of these measures.) Yet no single study has shown a consistent positive relationship among these variables. Nor has any study shown the developmental interactions between them. It is quite possible that these variables are not related or are inversely related with one another; or if they are related, these relationships might change between the ages of three and twelve. The purpose of the present study is to examine the interrelationship of these variables, i.e., locus of control, achievement motivation, evaluative behavior and teacher ratings in an attempt to clarify the definition and development of independence.

Within this developmental framework the study is directed specifically at the following questions: 1) How do locus of control and achievement motivation develop? What is the relationship between these measures? 2) How does evaluative behavior develop? Is there an age related preference for self versus adult evaluation? Is there an age related selection of positive versus negative evaluation? What is the relationship between these behaviors? 3) Does the type of task affect evaluative behavior? 4) How do teacher ratings of independence and achievement relate to formal test measures? How do they relate to observed evaluative behaviors? 5) Are there sex differences involved in any of these measures?

PROCEDURE

Sixty white middle class subjects (10 boys and 10 girls of ages 3-5, 7-9, 10-12) from a public elementary school and a local nursery school were tested individually on measures of locus of control using Bailer Children's Locus of Control[2] and achievement

motivation using a simplified version of the Children's Achievement Scale[3]. Both tests were administered verbally with illustrated pictures to help the child visualize the question situation and to maintain attention. The tests were given on two separate occasions to minimize fatigue and boredom in the subjects. Both measures were tested in a preliminary pilot study to assure that they could be understood by all the age groups involved. However, preschool children were unable to understand the tests and were replaced by children who could complete the tests.

In addition, teachers rated subjects' independence and achievement using "high," medium," and"low" for each measure.

The children were introduced to the apparatus designed for measuring self and adult evaluation. The apparatus is a box with four buttons: two of the buttons activate tape recorders, and two summon the experimenter from behind a screen on the other side of the room. The buttons are painted with faces, either smiling or frowning. In each case the smiling face button elicits positive evaluation (for self the tape says "I'm doing a good job, for adult the experimenter says, "you're doing a good job") and the frowning face button elicits negative evaluation (for self the tape says "I'm doing a bad job," for adult the experimenter says, "You're doing a bad job"). The children were tested to make sure that they understood the meaning of each button. Only children who demonstrated understanding were continued in the procedure. Three subjects were replaced at this point.

The subjects were then given five minutes to work on an impossible puzzle and five minutes to work on an art project. The order of these tasks was counter-balanced to prevent error due to task order. During the tasks the children were instructed to push as many buttons as often as they liked, to indicate how they felt about what they were doing. The number of buttons pushed were automatically recorded with a counter system. When each subject completed both tasks, he was thanked for his participation and returned to his classroom.

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This picture illustrates the apparatus set up. E was concealed behind the screen. S worked on the project (art or puzzle) and pushed the appropriate buttons for evaluation: The top buttons elicited adult evaluation - smiling face for positive evaluation, frowning face for negative evaluation; the bottom buttons elicited self evaluation - smiling face for positive evaluation, frowning face for negative evaluation. The number of times each button was pushed was automatically recorded.

RESULTS

The data for the study were analyzed using analysis of variance, a correlation matrix and a Principal Axis Factor Analysis. All significant findings reported are at the .05 or .01 level of significance.

The analysis of variance for locus of control and achievement motivation showed that these measures follow different developmental patterns. As indicated in Figures 1 and 2, while locus of control became more internal, achievement motivation decreased over age. That is, children became more internal on locus of control with the main increase between four and seven year olds ($F = 21.71$, $p < .01$) and scored lower on achievement motivation with the main decline between seven and eleven year olds ($F = 5.34$, $p < .01$). More importantly, the correlation matrix showed an inverse relationship between locus of control and achievement motivation in the four year olds ($r = -.49$). No significant relationships were found in the seven and eleven year olds suggesting that these variables should not be used interchangeable to indicate independence.

The analysis of variance showed large developmental changes in evaluative behavior. As indicated in Figure 3, four year olds showed a strong reliance on positive adult evaluation. This reliance decreased significantly over age ($F = 5.57$, $p < .01$). At the same time there was a significant increase in negative self evaluations over age ($F = 4.42$, $p < .05$). There were non-significant decreases in positive self evaluation ($F < 1$) and negative adult evaluation ($F = 1.3$) over age. As can be seen in Figure 3, there is a general movement toward more reliance on self evaluation. Self evaluation of both types is much higher than adult evaluation for 11 year olds, slightly higher for 7 year olds, and not clearly differentiated from adult evaluations in 4 year olds. While 11 year olds relied on self evaluation, 4 year olds sought positive evaluation of any type regardless of source. This demonstrates a developmental change in both source of evaluation and direction of evaluation.

Task also significantly affected evaluation. The puzzle task, specifically designed to be a difficult task, generally elicited negative evaluations. Both the negative self-evaluations ($F = 8.4$, $p < .01$) and negative adult evaluations ($F = 9.4$, $p < .01$) were significantly higher for the puzzle. The art task, which was not inherently difficult, elicited significantly more positive self-evaluatio ($F = 5.24$, $p < .05$). Positive adult evaluations were unaffected by task.

The correlation matrix and four analysis of variance using teacher ratings o independence, age, and task as independent measures and the four types of evaluat behavior as dependent measures showed that teacher ratings of independence did no significantly relate to any other variables. That is, teacher ratings of indepen were not related to formal test measures of locus of control or achievement motiv tion, nor to observed evaluative behavior. However, there was a small positive correlation ($r = .38$) with teacher ratings of achievement.

The correlation matrix and four analyses of variance using teacher ratings o achievement, age, and task as independent measures and then four types of evaluat behavior as dependent measures similarly showed that teacher ratings of achieveme were not related to formal test measures of locus of control or achievement motiv tion and were significantly related to only one dependent measure of evaluative behavior, i.e., seeking negative adult evaluation. As significant three-way inte action between task, age, and teacher rating of achievement ($F = 6.05$, $p < .01$) showed that low achieving four year olds seek negative adult evaluation during th difficult puzzle more than any other group.

With regard to the variable of sex, neither the analyses of variance with se as an independent measure nor the correlation matrix showed any significant relat ship between sex and any other variable.

DISCUSSION

The purpose of this study was to examine the interrelationship of locus of control, achievement motivation, evaluative behavior and teacher ratings in an attempt to clarify the definitive and development of independence.

From this analysis we find that the variables do not show the anticipated high positive relationship one might expect if all of the variables were used as indices of the same construct, namely independence. We also see that the strength and direction of the relationships show age related changes.

The tentative conclusion to be drawn from this research is that independence, as defined by the measures studied, changes qualitatively and not just quantitatively between the ages of 3 and 12. That is, not only do the scores of these measures change, but their interrelationships also show a developmental shift as well.

The results suggest that as children develop between the ages of 3 and 12, locus of control becomes more internal, achievement motivation decreases, and the child relies less on adult evaluation and more on his own evaluation. That is, the child shows increasing acceptance of responsibility for both good and bad consequences of his actions. With this recognition of responsibility, he also shows an increased tendency to evaluate himself negatively. Perhaps this combination makes it more difficult to be strongly motivated for achievement.

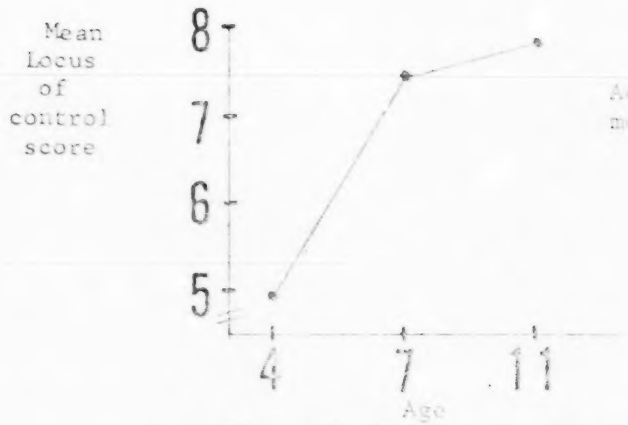

Figure 1: Effect of age on locus of control scores.

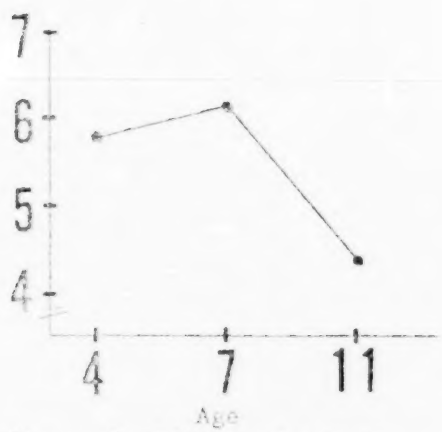

Figure 2: Effect of age on achievement motivati score.

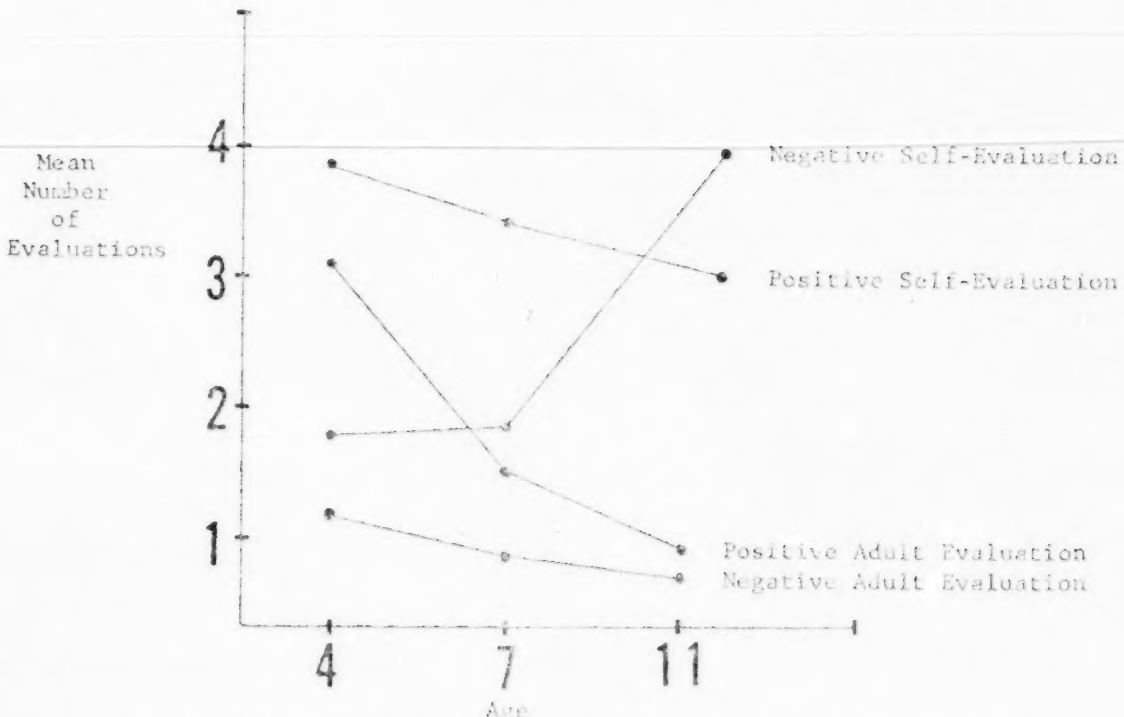

Figure 3: Effect of age on adult vs. self and positive vs. negative evaluation.

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